

What is claimed is:

Sub A2

1. A polymer-clay nanocomposite comprising:
 - (i) a melt-processible matrix polymer, and incorporated therein
 - (ii) a layered clay material having less than about 2.0 % by weight of quartz, based on the weight of the clay material.

2. The nanocomposite of claim 1, wherein the melt-processible matrix polymer comprises a polyester, polyetherester, polyamide, polyesteramide, polyurethane, polyimide, polyetherimide, polyurea, polyamideimide, polyphenyleneoxide, phenoxy resin, epoxy resin, polyolefin, polyacrylate, polystyrene, polyethylene-co-vinyl alcohol, or a copolymer thereof, or a mixture thereof.

Sub A3

3. The nanocomposite of claim 1, wherein the melt-processible matrix polymer comprises a partially aromatic polyamide, aliphatic polyamide, wholly aromatic polyamide or a mixture thereof.
4. The nanocomposite of claim 1, wherein the melt-processible matrix polymer comprises poly(*m*-xylylene adipamide) or a copolymer thereof, isophthalic acid-modified poly(*m*-xylylene adipamide), nylon-6, nylon-6,6, or a copolymer thereof, EVOH or a mixture thereof.
5. The nanocomposite of claim 1, comprising greater than zero to about 25 weight percent of the clay material.
6. The nanocomposite of claim 1, comprising from about 0.5 to about 15 weight percent of the clay material.

Sub C1

7. The nanocomposite of claim 1, wherein the clay material comprises montmorillonite, hectorite, mica, vermiculite, bentonite, nontronite, beidellite, volkonskoite, saponite, magadite, kenyaite, or a mixture thereof.